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ABSTRACT

This exploration of the origins of educational communications and technology as a field focuses on the 1920s when the visual education movement first appeared. An explanation of the study precedes separate reviews of 13 primary sources--i.e., visual education textbooks--and draws on them to provide evidence for an analysis of the ideas and forces behind the national movement in visual education. The textbooks reviewed are: (1) "Motion Picture Education" (Ernest A. Dench, 1917); (2) "Motion Pictures for Community Needs: A Practical Manual of Information and Suggestions for Educational, Religious, and Social Work" (Gladys and Henry Bollman, 1922); (3) "Visual Education Teachers' Guide to Keystone '600 Set'" (Keystone View Company, 1922); (4) "Comparative Effectiveness of Some Visual Aids in Seventh Grade Instruction" (Joseph John Weber, 1922); (5) "Motion Pictures in Education" (Don Carlos Ellis and Laura Thornborough, 1923); (6) "Visual Education: A Comparative Study of Motion Pictures and Other Methods of Instruction" (Frank N. Freeman, Ed., 1924); (7) "The Cinema in Education: Being the Report of the Psychological Investigation Conducted by the Special Sub-Committees Appointed by the Cinema Commission of Enquiry Established by the National Council of Public Morals" (Sir James Marchant, Ed., 1925); (8) "Teachers' Guide: Keystone Primary Set" (Laura Zirbes, 1926); (9) "Motion Pictures for Instruction" (A. P. Hollis, 1926); (10) "Fundamentals in Visual Instruction" (William H. Johnson, 1927); (11) "Visual Instruction in the Public Schools" (Anna Verona Dorris, 1928); (12) "Picture Values in Education: A Complete Record of an Experimental Investigation. . ." (Joseph John Weber, 1928); and (13) "Motion Pictures in the Classroom: An Experiment to Measure the Value of Motion Pictures as Supplementary Aids in Regular Classroom Instruction" (Ben D. Wood and Frank N. Freeman, 1929). (JB)

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VISUAL EDUCATION TEXTBOOKS IN THE 1920S: A QUALITATIVE ANALYSIS

Andrew Robert James Yeaman

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VISUAL EDUCATION TEXTBOOKS IN THE 1920S: A QUALITATIVE ANALYSIS

The field of educational communication and technology in America dates back to the early 1920s when the visual education movement appeared. Originally a teaching method, visual education spread concurrently with the rapid adoption of motion pictures as a medium of instruction. Educational machine technology and the supporting social technologies are so commonplace in classrooms 60 years later, it is easy to take those technologies for granted. Later accounts of the founding decade including personal reminiscences do not analyze but ignore the transition from a predominantly verbal tradition to the extensive use of visual materials. Perhaps their cursory nature is due to their frequent purpose as small slices of much larger and more general works. Exceptions using historical methods of investigation are Saettler's eclectic survey (1968), Lembo's dissertation drawn from archives, minutes and interviews (1970) and Wilkinson's summary of media experimentation (1980).

Towards building original research founded on primary source documents, I seek to describe the development of the visual education textbook both in sentiment and prescription. The time period selected is prior to the merger of the three national visual education organizations into the National Education Association's Department of Visual Instruction--late February, 1932. This paper represents a synthesis anchored on my critical reviews of early visual education textbooks. To provide

clarification, those reviews are appended for reference. The choice of books was determined in most part by Saettler's bibliography (1968). This was corroborated by consulting Dale, Dunn, Hoban and Schneider's resource list (1937), McClusky's AV Bibliography (1950) and the main catalog of the University of Washington libraries.

The only major text unobtainable was Lescarboura's The Cinema Handbook (1921). Interlibrary borrowing was not attempted for two reasons: 1)this item had not been identified has having theoretical importance, instead covering solely mechanical aspects, and 2) the exploratory nature of the study.

The exploratory nature of the study also limited investigation to being qualitative and critical. A quantitative mode of inquiry such as content analysis is more appropriate for hypothesis testing rather than the activity reported here. The intent of my descriptions, therefore, is to generate hypotheses regarding the shape and purpose of visual education textbooks. Because they were mainly meant for teachers purportedly wanting to increase their pedagogical skills, it seems reasonable to view the works examined as textbooks even though they may not all have been so grouped together in their own time. In consequence, books reporting research are included since they directly addressed classroom issues in visual education and were for consumption by the same audience who evinced concern for empirical support.

The greatest anomaly is the number of books trying to convey the best truth available. With hindsight, the field seems small; there was not that much to know. Only the pressure of vital continuous changes in the state of knowledge in the emerging technology would have warranted new reports. Subjective analysis of the texts renders six issues of ongoing development. These are:

- o The need to legitimize visual education by joining it to mainstream education and consequently
- o the growing concern to justify visual education practice, which was bolstered by
- o empirical research, in turn reflected by
- o a change in the status and authority of the texts' authors. Underlying these processes lay
- o belief in the strength of visual education and
- o sugar plum visions of the future of education and visual communication.

The visual educationists rode the crest of a wave. Photography had democratized the visual communications previously reserved for thsoe skilled in drawing and painting. Motion pictures were becoming accessible due to safety film, electric filament lamps simplifying operation, less expensive 16mm film allowing lighter, more portable machines and a new standard width accepted by the film industry who eventually saw the financial light. Seldom is the need for research knowledge about new educative practices so urgent that doctoral dissertations receive the degree of attention that Weber's (1921) and McClusky's (1924) did.

Keystone had first publicized the concept of visual education and their catalogs contained not just endorsements from educational leaders but philosophical positions. This suggests many of the ideas supporting motion pictures in education may have been borrowed or adapted from justifications for the use of still pictures. Further, Dench (1917) and subsequent writers pointed to the economic niche waiting to be filled by motion picture companies willing to make a conscientious effort in producing educational films for children. The relative merits of the three-dimensional illusion of the stereograph and the movement depicted by motion pictures were debated and academics stepped in to referee by conducting experiments.

The nature of who was an authority on visual education changed during this decade as evidenced by the different credentials born by the early writers--motion picture people--and later writers--professors. The books changed from general to specific with less how-to technical information and increasing attention related to curriculae and techniques of instruction.

Empiricism was the tool chosen to justify visual education as a panacea. Although eye to brain is the shortest route for information, nearly everyone pointed out that motion pictures would not displace teachers. Interestingly, no one ever tried that experiment and though visual presentations were compared with lectures, lectures by different teachers were not compared. By focusing on achievement models of evaluation, the researchers made their task more difficult. They had brought in scientific

measurement and tossed out logic. Visuals conveyed a different kind of information. This realization lies amidst the scramble of results Freeman gathered (1924). Pictures enrich the learning environment. Motion adds something else on top--as the British investigation with its interesting qualitative aspects showed (Marchant, 1925). Consequently visual education textbooks maintained a more commonsense approach based on research and logical inferences (Dorris, 1928). These sorts of prescriptions were not solid enough to claim motion pictures as always superior but Eastman Kodak poured money in. Freeman must not have read his own conclusions for he signed up to conduct a massive gross media comparison study with Wood (1929). It clearly did more to promote educational films than to investigate theri characteristics.

The publication of visual education textbooks stopped in 1929 and did not resume until 1932. Probably this was due to the Wall Street Crash. Nevertheless, the foundation for the media taxonomies and theory of later decades had been laid by Johnson (1927) and Weber (1928).

Visual education sometimes bore the characteristics of a dogma and extravagant claims were made. It was proclaimed as the universal medium, far more precise than words and was hoped to bring about global unity. It was repeatedly tied to the great philosophers of education. Claiming descent from Comenius, visual educators sought historical legitimacy by joining the battle of realists and naturalists against the formal humanists.

In the face of all this bombast the application of empirical research techniques reduced the visual education method to visual aids--although a national movement had been started.

LIST OF REFERENCES

Dale, E., Dunn, F. W., Hoban Jr., C. F. and Schneider, E. Motion pictures in education: A summary of the literature. New York: Wilson, 1937.

Lescarboura, A. C. The cinema handbook. 1921.

Lembo, D. L. A history of the growth and development of the Department of Audio-visual Instruction of the National Education Association from 1923 to 1968. Unpublished doctoral dissertation. New York University, 1970.

McClusky, F. D. The A-V bibliography. Dubuque: Brown, 1950.

Saettler, P. A history of instructional technology. New York: McGraw-Hill, 1968.

Wilkinson, G. L. Media in instruction: 60 years of research. Washington, D.C.: Association for Educational Communications and Technology, 1980.

Dench, Ernest A. Motion picture education. Cincinnati: Standard, 1917.

Having written three previous cinema books, Dench (1917) turned his attention to education and created a chatty text filled with newsy tidbits. His global approach was made up of fragments linked by common-sense suppositions and advice based on intuition. There is little documentation of the numerous sources although it is possible the events he refers to were common knowledge to contemporaneous readers. For example, in 1916 a disease causing infantile paralysis plagued New York. Children were barred from photoplay theaters as a preventive measure. The movie industry reacted by producing a film with the city's Board of Health to illustrate the sickness, treatment and supposed cause: unsanitary living. The film was shown on the backs of trucks and displayed in many parts of the city. Dench brings this in to maintain his theme that children watch films a lot and are influenced by them.

The philosophical base for adapting this popular medium to education is one of limitation. Motion pictures will not replace teacher-centered instruction although they certainly may assist in it. The recommended technique is for the teacher to give the lesson on the subject and follow it with a pertinent motion picture which the teacher narrates. The laziness of pupils may be dealt with by threatening to eliminate the motion pictures.

Dench thinks the senation felt by learners viewing motion pictures would assist the generation of subjective viewpoints;

although motion pictures are not so good at imparting facts as textbooks, they are better at giving meaning. Further, they provide english classes with subject matter for compositions, and can help improve performance in sports. Close-ups are very useful in the instruction of handwriting. Motion pictures may also be used to teach arithmetic, stimulate imagination and study animals. However, indoor motion picture photography with natural light is not available so it is important to rely on photographs in books and on still pictures provided by slides in order to illustrate inside scenes.

A large part of Dench's book discusses technical information. Many details are provided on film-making, including how to keep film cool and dry when filming in tropical climates and how to go about developing your own motion picture film.

Dench ends by asking for more quality films for children even though producers and theater owners fear it is not a money-making proposition.

Bollman, Gladys and Bollman, Henry. Motion pictures for community needs; a practical manual of information and suggestions for educational, religious and social work. New York: Henry Holt, 1922.

Motion pictures as a new means of expression--whether an art or a tool--are here to stay, say the Bollmans, and ten thousand schools and churches have motion picture projectors. Continued success depends on obtaining suitable films and the knowledge of their proper use. The National Education Association recognized this at the Cleveland convention in February, 1920 when a Department of Visual Education was named. However, the educational value of early films was limited since many hinged on sensationalism or depicted blatant inaccuracies. In one historical film, the authors detected the anachronism of a portrait of Lincoln hanging on the wall of George Washington's private office.

Sources of films are listed, including free, government films. Qualified State Distributing Centers manage the distribution of films for the Visual Instruction Section, Bureau of Education, Department of the Interior. The State College of Washington at Pullman is shown as one of them. Other films were available from exchanges. The company names, addresses and who to contact are given. In Seattle alone there were 16 film exchanges.

The Bollmans argue that the theatrical film industry has a lot to gain from going beyond the 20,000 American motion picture theaters by additionally supplying the four per cent of the

schools currently using motion pictures in instruction. They estimate this largely untapped market at over 12,000, plus thousands of churches and social service organizations. However, theatrical exhibitors fear competition and restrict feature film access from distributors. This fear serves more to limit the growth of the film industry. Theater, school and church could cooperate to their mutual benefit.

The first section of the book closes with a description of film publications and a bibliography of print resources. They also provide supplementary information for readers intrigued by part two which looks at some problems very real to the non-theatrical exhibitor. They are how to obtain projection equipment, comfortable facilities and how to make ends meet--not only from fund-raising but also from budget management. Single rather than dual projection means accomodating a transition during change-over of reels. The manner of presentation is climactic: a sermon should come after the picture but congregations are uncomfortable with this and most preachers show the film last. In schools, the teacher should tell the class about the film, then show it and then show it again, perhaps narrating it. Musical accompaniment distracts in educational or religious film use, but it does alleviate eyestrain--especially for children. If musicians are unavailable, then mechanical records may substitute. The Bollmans provide some anecdotes of film use for education experiments, increasing church attendance, worker education and relaxation, the reform of criminals, the

amazement of the New Hebrides savages, Americanization and providing evidence for the reform of street-car service.

The remaining two sections of the book are concerned with technical information. Part three consists of an annotated selection of one hundred programs--films in combination--for the specific needs of schools, churches and social organizations. Part four describes projection equipment, its installation, the legal and safety aspects of operation and supplies and manufacturers. There are specifications, prices and eleven photographs of projectors. Film repair or patching is described and seems very complicated without an explanatory illustration. Formulae for making up film cement are included.

Keystone View Company. Visual education 'teachers' guide to Keystone "600 set". Meadville, PA: Keystone View Company Educational Department, 1922.

Many of the ideas supporting motion pictures in education may have been borrowed or adapted from justification for the use of still pictures. Keystone View Company produced a compendium of learned endorsements to accompany its catalog in 1922: Visual education: teacher's guide to Keystone "600 set".

Keystone had been in the business for some time, having published their first guide in 1906 and specialized in lantern slides and stereographs--double pictures which fitted into a hand held viewer to give a three-dimensional illusion. The revised version of their materials collection represented each state and all the countries deemed important by the publishers and the 70 member advisory board. The book contains several pages of their portraits. As a side note it is of interest that of the eight women on the board, six were in vocational guidance.

The cross-reference classification plan enabled the use of the same pictures for more than one lesson and covered the following subjects: geography, history and civics, english, agriculture, nature study, vocational guidance, industrial arts, health, for the little folks (infants) and travelogues.

A short essay by Charles W. Eliot, President Emeritus of Harvard, opened the catalog by complaining about American education depending too much on reading for instruction instead of training the senses. He was interested in developing visual skills, hand coordination and memory. He does not continue by

justifying his position. Instead, he tells readers what a wonderful job the Keystone View Company of Meadville, Pennsylvania is doing in providing learning materials appropriate for stimulating all the senses. The specific recommended learning strategy is to have students look through the stereoscope at the stereographs and try to remember enough information to give an oral or written report later. Teachers use corresponding lantern slides to project for whole classes to see at once.

William Bagley wrote on concreteness in education, endorsing the practical experience of things in realistic situations. Realism is brought to the classroom by stereopticons, moving pictures and stereographs. According to Bagley, the illusion of depth provided by stereographs is more important than motion or simple magnification as far as versimilitude is concerned. He restrains this conjecture by limiting it to the elementary grades.

Frank M. McMurray proposed that pictures are, just like print, a legitimate communication medium for ideas. He feared print reduces imaging--or seeing in the mind's eye what is meant--and it is important to think about and digest all kinds of information in order to comprehend fully. Comprehension is shown by communicating ideas to others.

Oliver Wendell Holmes, the current designer of the stereoscope, had been instrumental in perfecting the instrument. He expressed sentiments of global unity, hoping it would serve to

familiarize people all over the world with each other. Each picture should be studied many times: "Do we know all there is in a landscape by looking out at it from our parlor windows?"

Weber, Joseph John. Comparative effectiveness of some visual aids in seventh grade instruction. Chicago: Educational Screen, 1922.

This is Weber's 1921 Columbia University dissertation. A warning notice is conspicuously posted making reservations about the conclusions since they are liable to misinterpretation by both visual aids producers and educators. The conclusions from the experiments are specific, not general. Visual aids do not replace regular instruction nor is their use shown to be economically sound.

Despite this sober proviso, the dissertaion starts off with a kick of vitality by asking if visual aids have real value or are merely a fad. Although visual education is very old, advances in photography have made it much more accessible. Towards achieving an evaluation Weber proceeded in a scientific manner, first endeavoring to determine the relationship of experience to learning. He asked 81 graduate students to construct the etymology of 50 common words by determining through which senses the meanings came. Ten points were to be awarded for each word and distributed across these five categories: visual, auditory, tactile, miscellaneous organic and taste and smell experiences. As a result, Weber found 40% of the words had a visual sources and 25% came from audition. Despite severe questions of the studys' validity--which he lists--he attributes 40% of conceptual learning to visual experience as a primary source of knowledge.

In his first classroom experiment with children, Weber

decided to question the use of verbal information transfer in the schools. He asked , on behalf of the practical educator, "Is the textfilm worth a place in the curriculum?" He operationalized this by preparing three lessons from films on life in India, China and Japan. He provided three treatments: film followed by lecture, lecture followed by film and, in emulation of John Henry and the steam drill, the comparison of these film-lessons with lecture followed by rapid-fire review questions in place of the film. The subjects were nearly 500 seventh grade pupils from six classes of boys and six classes of girls. They were put into three groups approximately equal in size and ability. Films and lectures were delivered en masse in the school auditorium. Learning was measured by 60-question yes/no tests the day after instruction.

Weber reports the results suggest the film lesson combination is more effective than oral lecture. Also, showing the film at the start is the most effective technique for film lessons. Intelligence testing showed the brightest pupils still did well without films.

There were three more experiments. The next examined what happened when students were asked to draw animals from remembering verbal descriptions as opposed to seeing a picture as well has hearing the narrative. The subsequent study looked at variations of technique in teaching about abstract concepts. The concept chosen was the working of an artesian well and was illustrated with a diagram presented by lantern slide. Rather

than looking at the combinations, the last experiment measured the effect of single variables: a transcript of a lecture, oral lecture, film-lesson, and film with explanatory comments. To reduce verbal bias in the responses, the tests also required students to draw the topic of the lesson--for instance, a glacier and its features.

In summary, Weber writes that his studies have proved the value of pictures in teaching. He reviews some prior research (pp108-109) and concludes much work still needs to be done. Although research issues have been identified, a common methodology has yet to be agreed upon in the field of visual instruction. He forsees massive efforts at correlation between curriculum content and visual presentation.

Ellis, Don Carlos and Thornborough, Laura. Motion pictures in education. New York: Crowell, 1923.

Ellis and Thornborough (1923) produced a cohesive guide to visual education for teachers: Motion pictures in education: a practical handbook for users of visual aids. Initially a preparatory school teacher, Ellis had gone on to become Chief of Education for the U. S. Forest Service and head of motion pictures in the U. S. Department of Agriculture. Thornborough was a U. S. government film editor. They opted for a chronological approach which tied motion pictures to earlier educational methodology: education through the senses dates from cave paintings to Egyptian hieroglyphics to photography.

They further legitimated motion pictures by describing their function in relation to three contemporary philosophies of learning: humanism, realism and naturalism. Humanists studied the writings of great men but the progressives--Dewey, for instance--attacked humanism for being too abstract from daily experiences. The realist school said the immediate encounter with nature and reality supercedes learning from the written record. The naturalists went one step beyond that: the only preparation for life is living itself.

In the overlapping beams from their three lights, Ellis and Thornborough call Comenius the realist father of visual education for having created the first illustrated textbook, Orbis Pictus, in the 17th century. Also, Ellis and Thornborough declared that the need expounded by Pestalozzi, Rousseau and Froebel in the

18th and 19th centuries for developing perceptual skills in children is further met through visual education. Ellis and Thornborough accept H. G. Wells' endorsement (p.95-96) and that of Chicago Schools Superintendent, Dr. William L. Bodine: "Progressive education calls for picturized pedagogy". Bodine predicts motion pictures will reach backward pupils and thus diminish truancy.

The views of Ellis and Thornborough were moderate for their times. At one extreme humanists reacted by saying that motion pictures stimulated sight but not insight; that perception does not denote cognition. Edison on the other end of the spectrum was a proponent of the radical view claiming films would replace textbooks. Ellis and Thornborough stood the middle ground. They labeled Edison as insane and defended the teacher-pupil method as irreplaceable since films cannot substitute for teachers. At the same time they defended films for promoting learning from seeing rather than hearing.

Although they admit to a lack of acceptable films, they discuss the advantages of using films in instruction and recommend film teaching methods based on experiments and established principles. While questioning the validity of experiments, they admit findings based on experience may also contain flaws. For instance, they dispute J. J. Webers' deduction that a lecture following a film causes a two per cent increase in learning efficiency since practice does not bear this up. They do not explain what is meant by learning efficiency nor how it was measured in either instance.

Ellis and Thornborough list a dozen pedagogical principles

for using visual aids including the following 1) When more senses are stimulated more is learnt. 2)Teachers should be more prepared than students.

Towards securing more empirical knowledge of visual educations' effectiveness, they note Will Hays' attendance at the National Education Association Convention the previous year. Hays was President of the Motion Picture Producers and Distributors of America and he addressed the convention suggesting cooperation between the two organizations and study of educational films. Ellis and Thornborough point out, Hays represented theatrical film companies rather than the small educational producers who previously had been the major suppliers. Nevertheless, Dr. Charles H. Judd, Dean of Education, University of Chicago, was appointed to develop a research program.

Ellis and Thornborough express visions of the future such as talking pictures in schools, district and building level visual education supervisors, school film libraries, daylight projection and movies projected from behind the walls. They also predicted the transmission of movies by radio.

Despite their enthusiasm for communication engineering, they stick with the realist/naturalist agenda. Rather than show a film of a flower, they think it better to give each student a flower to examine.

Freeman, Frank N. (Ed.). Visual education: A comparative study motion pictures and other methods of instruction. Chicago: University of Chicago, 1924.

In 1922 Freeman, a professor at the University of Chicago, received $10,000 from the National Education Association to conduct studies of educational motion pictures. The first 80 pages of the report introduces the problems which were studied, providing summaries and 17 conclusions. The remainder presents the original reports. There were 13 in all. Not all of the results were totally supportive of visual education but all bore relevance to classroom applications. To provide a sample, four of the studies are briefly described here.

"Comparison of different methods of visual instruction" is drawn from Frederick Dean McClusky's doctoral dissertation at the University of Chicago, 1922. He completed 14 experiments, having started in May, 1920. To assure equivalence among experimental groups he used Intelligence Quotients. He found evidence for integrating visual education into the curriculum: combinations of various forms of instruction--lecture, chalk talk, maps, films and stereographs--were usually the most effective methods employed.

Nina Joy Beglinger conducted "An experiment in the use of stereographs and slides in teaching oral English to foriegners". The picture group were producing nearly twice as many sentences at the end of the experiment as the control group. Clearly pictures help in teaching the oral use of English to adults but reading and writing must not be neglected.

Carolyn Hoefer and Edna Keith ran "An experimental comparison of the methods of oral and film instruction in the field of health education". Behavior change, not the mere regurgitation of information, was measured. Fifth-grade students numbering 865 reported the amount they slept whether the windows were open while they were asleep and what they consumed for breakfast. As a result, orally instructed students gained more weight; film instructed students gained more sleep. On a paper-and-pencil test of facts, however, the non-film group showed a greater gain. Hoefer and Keith conclude the films they had shown were not worth the money spent on their rental: better films are needed. This report contains photographs of student projects and stills from the American Red Cross film, The Knowing Gnome.

H. Y. McClusky performed "An analytical study of the content of educational motion picture films". The research question asked how much footage actually conveyed information unique to the format and portrayed action. Examination of 96 representative titles by running them slowly and measuring showed they were made up of 33.54% subtitles, 11.85% stills and 54.62% of movement. Literally, they are film textbooks--reading matter and static illustrations about half the time. Some films in some subjects are far worse. This is wasteful and the production of good education films requires more than expecting dross to be transformed into gold through the magic of motion pictures.

Reading these studies leaves the reader with the overwhelming impression, there is, indeed, value for the various

forms of visual education as part of the parcels of skills and methods all instructors ideally should possess.

Marchant, Sir James (Ed.). The cinema in education: being the report of the psychological investigation conducted by special sub-committees appointed by the Cinema Commission of Enquiry established by the National Council of Public Morals. London: Allen & Unwin, 1925.

The National Council of Public Morals was concerned about the physical and moral renewal of the British race, nevertheless their report on the influence of the cinematograph on young people also received attention in this country. The recreational function of the cinema is obvious but it also is used for propaganda and education. Since nine out of ten urban children frequent cinemas this is an important medium of information transfer to youth and the effective use of educational films as an adjunct to school required investigation. Since expert opinions disagreed as to the value of the cinema in education, two sug-committees were appointed: one for cinema experiments and the other for psychological research. The latter featured two psychologists who achieved considerable reputations: Charles Spearman and Cyril Burt.

Although four psychological objectives were set initially, they were reduced. The durability of impressions produced by moving pictures was fused into the comparison of normal instruction with cinematographical education. Fatigue was difficult to measure and consequently laid aside. Aesthetics were treated only incidentally. Therefore, an achievement model of evaluation was adopted.

The investigators considered several research methods. They thought oral lessons could not be compared due to the dependency

on the teacher involved. Similarly, constructing an illustrated booklet as a token textbook equivalent to a film was eliminated. Lantern slides taken from a film were deemed acceptable. Despite the unusual methodology, showing five slides per minute with subtitles reduced the difference between film and other instruction largely to the attribute of motion.

The amount learned was tested by requiring boys to write essays. There were assessment problems both quantitatively--number of facts recorded--and qualitatively--regarding the reality or vividness of what the child realizes. There was also considerable subject mortality--only 23 out of 40 completing group testing due to absences. A replication of the experiment with girls located sex differences--boys had memorized the subtitles, whereas girls ignored them and described the pictures. Comparison of film and slide-generated essays apparently required the degree of attention usually associated with case studies and resulted in generating more specific impressions than the slides. This held even for essays written a year later. Further analysis of the girl's experiment compared the additional treatments of film-talk, slides-talk and oral presentation alone. More evidence on gender-related expression was gathered. For both film and slides, the commentary increased the number of general statements written. Nevertheless, "The fitting of words to an experience is by no means the same thing as remembering someone else's description of it." (p.75). On the whole oral presentation alone was thought inferior compared to instruction

by film. The experimenters suggest misunderstandings could be eliminated by stopping the film and supplementing it with lecturettes. Further, educational film production should involve people knowledgeable in the psychology of children.

The cinema experiments sub-committee began work in 1922 on evaluating projection apparatus. They applied the ideal criteria of it being portable, cheap, easy to manipulate, easy to freeze-frame, able to meet legal and safety requirements, a good source of illumination and doubling as a magic lantern. No one projector possessed all these features. A concatenation of technical write-ups on 15 models followed. The DeVry portable, for instance, can be carried "without either physical strain or loss of dignity."

The same sub-committee viewed at least 30 films deemed educational. They feel the producers are creating films which do not fit easily into the school syllabus. They say it is time for the syllabus to be considered. Until it is cinema will not replace slides. Therefore, public and propaganda film production must separate from educational film production.

The report closes with a memo on safety statutes and a brief review of educational films in other countries. France seems very enthusiastic about projecting films in schools. A French commission report dated 1920 claimed "The cinematograph has the advantages of the picture and the story without their disadvantages. It's Life."

Zirbes, Laura. Teachers' guide; Keystone primary set. Meadville, PA: Keystone View, 1926. (Keystone visual instruction series)

Zirbes was an Investigator in Reading and a Lecturer in Elementary Education at the Teachers College, Columbia University. Her prefatory statement, dated December, 1924, explains the philosophical purpose of the guide: to foster teaching of reading as a pleasure rather than a requirement and the development of correct social attitudes of future citizens. The Keystone Primary Set, itself, consisted of 300 pictures available as lantern slides and stereographs. The guide goes far beyond being a mere catalog and collection of endorsements but prescribes learning activities for kindergarten and first, second and third grades.

Pictures can be superior since direct experience is not always possible and stereographs are obviously better than flat pictures since they contain a very convincing illusion of three-dimensional reality. An interesting technique described for using slides is to project them on the blackboard. The image is then added to with chalk. One example given is in counting the number of geese in a picture a 1 is chalked over each birds head. Motion pictures are not mentioned.

Zirbes frequently invokes the psychology of learning without giving references. Developing social insight means ameliorating class conflicts.

Hollis, A. P. Motion pictures for instruction. New York: Century, 1926. (Century education series).

Hollis was a film editor at the De Vry Corporation--a supplier of educational motion pictures--and quotes Ellis and Thornborough (1923) to justify the viewpoint that motion pictures expand experience. His purpose in writing motion pictures for instruction was to avoid wasting money and pupils' time. He would achieve this by imparting film pedagogy based on currently acceptable practice. He issued a declaration: visual educationists do not conduct research in experimental psychology but investigate the educational use of visual stimuli based on the common sense classroom tradition of using such visual tools as blackboards, maps, printed pictures and slide projectors. For example, Freeman's research (1924) showed which age a film is directed towards is set by the level of the teacher's presentation. Hollis notices a fallacy here and emphasizes that some films are better suited to twelve year olds than undergraduates.

Since it is a term often used very loosely Hollis defines the educational film. It excludes comedies. It is a teaching instrument. In a general sense, this could mean Flaherty's Nanook of the North or, specifically "the modern text or classroom film" such as Elements of the Automobile, Living Natural History or Citizens in the Making. Propaganda includes many educational films intended to change attitudes. A large part of the book is devoted to listing educational films and

providing a brief description of each. Just as books and other teaching are bought outright, film purchase by schools is preferable to rental. Preview is recommended. Hollis suggests a basic collection for film librarians. Of course, De Vry stands to gain from all this!

Hollis comments that the 35mm width is the most popular at present, though a two year Kodak- NEA project with 16mm film has been started to see if off-standard size films are feasible.

There is a selected bibliography of recent items and sources of film lists. An appendix provides equipment information and advocates the use of portable projectors in classrooms. The book ends with Hollis' 1920 composition The Film Prayer: "I am celluloid not steel; O god of the machine have mercy. . ."

Johnson, William H. Fundamentals in visual instruction. Chicago: The Educational Screen, 1927.

Once a chemistry teacher, Johnson wrote his Fundamentals in Visual Instruction having attained the position of Professor of Education at Loyola University, Chicago. He saw visual instruction not as a subject to study but as an effective teaching method which increased student interest. He wrote his book to further improve teaching, hoping to upgrade pedagogical methods of America's teachers. Like others of this decade, Johnson attached the new visual method of teaching to the history of education. Humanists taught children the books of selected writers. Whereas realists--like Comenius--illustrated life. Naturalists said school is part of life rather than getting ready for it.

He believed that the needs of American learners changes over time and so should schools. Exploration of this theme fills the first five chapters. Evaluation based on World War troop induction showed that many young Americans are illiterate and not physically fit. Current concern is shown by the number of present innovations and new methods: the Gary Plan, the Dalton Plan, platoon schools, supervised study, the project and socialized recitation. Johnson thinks schools must save time since there is so much to do in so few years and generally must become more efficient. Further, schools must train both the dull and the bright. For Johnson, the answer was visual instruction.

He points to its effective use in business. The Illinois

Central Railroad used visual aids to improve the way workers handled freight. Also, Chicago North Shore Milwaukee Railroads used visual instruction to Americanize immigrant workers by teaching them American History, health standards and habits.

He extrapolates from his observation that much early learning is visual to a matrix of four types of learning: sensori-motor, perceptual, associative and problem-solving. Learning, therefore, proceeds through a hierarchy from sensory to ideational. His third justification is that educational experiments show visual methods motivate students to learn more efficiently. Visual instruction does not replace traditional verbal instruction but gives it a boost. The aim is not simply to give more sensory information but to direct attention to appropriate mental processing. Despite the increasingly scientific base for education, there is a lack of widespread use of stereographs, stereopticon lanterns and motion picture machines. This is due to the unavailability of materials and different teaching situations.

Johnson next reviewed current research such as Weber's investigation of learning facilitated by pictures accompanied by verbal instruction. Weber concluded film should follow lecture though simple slide picture can preceed the verbal presentation. Johnson also describes the experiments conducted by Freeman's group and suggested readers also read Freeman's book. He also recommended texts by Weber and Hollis and The Berkely Monograph on Visual Instruction.

A definitive list of visual aids is also provided: the excursion (class field trip), laboratory, flat pictures, stereographs, textbook pictures, enlarged pictures, stereopticon slides, opaque projection, models, maps, globes, charts, graphs and motion pictures. In addition he delivers ten motion picture principles and precautions covering the flammable nature of motion picture film. He iterates other guidelines including "no excuse for using a motion picure when a still will do just as well".

Johnson concludes his book with comments on imminent motion picture developments: three-dimension color, talking pictures. "Visual instruction with modern devices will cease to be considered a fad, but rather the improvement and expansion of an educational procedure which is probably as old as civilization itself" (p.98). There is an extensive bibliography of 171 articles and 28 books--including ten reviewed in this paper.

Dorris, Anna Verona. Visual instruction in the public schools. Boston: Ginn and Company, 1928.

Dorris was Professor of Visual Instruction at San Francisco State Teacher's College and writes addressing the fundamental reasons underlying the use of visual aids. She discusses their value in bringing interest and meaning to education through concreteness. Intrinsic appreciation is the best motivation for learning. She justifies her position as a follower of John Dewey's doctrine of interest by pointing out the efficiency of this approach. Excessively verbal teaching founded on mediocre example reaches only half the students at best and she quotes William C. Bagley who observed that education improves individual functioning. Since learning comes about by sensory input, each student's ultimate productivity may be improved by clear communication through visual sensation to unify all experiences.

To provide an example, Dorris points to the convergence of thought in a group upon hearing the word automobile. A description of Crater Lake--to people who have no knowledge of it--produces a divergence of impressions. In both instances pictures are preferable if the receiver is to generate the intended image correctly. The intent of Dorris' analogy is to show that seeing pictures evokes imagery which has more in common than hearing words. The importance of avoiding the misapprehensions caused by ambiguous teaching is self-evident.

Nevertheless, visual learning materials should not be thought of as replacing books or the effort to learn but as a

stimuli to learn. Dorris proceeds by examining how they support instruction. More than simple conveyors of sensory information, visual aids should be socially efficient by evoking the development of rational thought. Pictures frequently express deeper relationships between ideas than wordy descriptions. Dorris states this realization has been shared by many educators: Froebel, Dewey and Comenius, and resulted in illustrated textbooks--though of uneven pictorial quality.

Specific prescriptions need to be applied to avoid misuse of visual aids. In many schools the showing of motion pictures in the auditorium appears as a subject by itself: visual instruction. However, not all students' needs can be met by one particular film of limited interest. Dorris is not against mass training itself, she goes on to enumerate the psychological laws of learning: 1) interest must be stimulated 2) effective response is necessary and 3) self-expression is essential. She describes dangers and limitations including the possibility of confusing first graders with too many picturs at one time or pictures which are too complex, poor in quality or for viewers of a different mental age. She is particularly concerned about the use of visual aids not adapted to the specific teaching situation such as showing a whole film when only a part is necessary to make the point.

The remainder of Dorris' book covers the types of visual aids, their applications in different subjects and their administration. Visual aids are framed in terms of travel from actual excursions to mental transportation via stereograph. Comenius, the father of the illustrated textbook, makes a cameo

appearance. An innovation in text design is mentioned: each new idea is represented by a picture. Social studies feature largely as subjects suitable for visual instruction methods. Dorris also advocates all teachers need training from summer sessions or university extension courses to gain "interesting and inspirational ways of presenting subject matter" (p.370). She wants action too, in form of a person in each school district to administer visual aids and show teachers how to use them despite disinterested principals.

Weber, Joseph John. Picture values in education: A complete record of an experimental investigation carried on with both grade pupils and college students at the University of Kansas in 1921-1922; also a partial summary of the Columbia University doctor's thesis "Comparative effectiveness of some visual aids", together with a suggested teacher training course outline. Chicago: Educational Screen, 1928.

Weber, a professor at the University of Kansas, prepared the manuscript in 1923 intending to supplement his 1921 thesis with his new studies. He aimed for a readership of teachers, researchers in education and psychology, visual instruction students and school administrators. The overall purpose of his investigations was to determine the relative educational values of flat, projected or stereoscopic pictures and make comparisons with existing assumptions including issues of time and cost. He reported these experiments: 1)stereographs versus photographs versus lantern slides, 2) the effect of perspective and color in the stereograph, 3) interpretation and perception of pictorial elements, 4) stereographs and verbal instruction, 5) lantern slides and verbal instruction. The total investigation was designed after pilot studies and used interrelated methods to strengthen reliability. To convey a flavor of Weber's work, one piece is reported in detail.

The first experiment used the principals office and the adjoining cloakroom as the laboratory. The subjects were 42 fifth and sixth grade pupils. Individual observations of the students were conducted by the experimenter. The task required of each student was to look at 15 pictures presented in three

media. Two forms of the test were alternated. Pictures were rotated and were drawn from Keystone views. The period of looking was measured with a stop watch. Data for the first picture was eliminated due to administration difficulties. The resulting average times were 1. Photographs: 18.7 seconds 2. Lantern slides: 20.2 seconds 3. Stereographs: 20.7 seconds.

The attention span was significantly less for photographs than for stereographs or lantern slides. Weber suggests stereographs have more appeal due to depth and lantern slides have more appeal due to larger size. Weber feels these inferences are empirically supported on the grounds that the longer a medium is observed out of the student's own volition, the greater educational value that medium possesses.

This is not a theoretical conclusion and alternative explanations are possible such as the area of visual field stimulated. Preferences were elicited and students only prefered slides or stereoscopic pictures. Possibly, measured responses were only estimates of compliance with expected behavior. Weber did not consider if the significantly shorter viewing time for photographs was due to whatever he chose as cues in each experimental situation for clicking his stop-watch on and off. Further, the average difference approaches two seconds. This may be significant but it must be of minimal importance since the range of viewing times varied from seven to 53 seconds. By my count, for 25 out of 42 studnets the amount of time spent viewing photographs was greater or equal to the viewing of either

stereographs or slides. Six students looked at photographs for longer than the other two media.

Although Weber remains convinced that prolonged attention span to a medium indicates higher educative value, he does broach the topic of the range of responses between individuals. He questions the shotgun approach of conventional group instruction but it is not a factor explored in any of the other experiments reported here.

Weber disparaged educational research prior to his decade as crude and irreproducible and he sought to ". . .raise education from the slough of personal experience to the level of mental or social science"(p.87). In his general summary and recommendations he endorses visual education for inducing student motivation, vitalizing the curriculum through making teachers aware of the value of pictures, heightening experience and increasing vicarious learning. He goes on to explain that visual aids can prevent retardation thus reducing elimination--leaving school early. Just as printing advanced educational practices, the invention of photography is increasing their efficiency.

The supplement reviews Weber's 1921 dissertation in part and expands on his arguments for more concrete instruction as an extension of the continuing revolt against formalism in education.

Weber's outline syllabus for his course in visual instruction begins with the history and growth of the Visual Aids Movement:

1. Primitive education
2. Sense realism
3. Comenius and his Orbis Pictus
4. Pestalozzi and Froebel
5. The Oswego Movement
6. Photography and education

On page 127 is an outline diagram of the functioning of typical visual aids. It runs from "things as reality" and "actual experience" to "photographs and picture realism" and "vicarious experience" to "metaphors as symbolism" and "memory experience". This appears to be a lost ancestor of the later cones (e.g. Dale's Cone of Experience); models and taxonomies of media.

Wood, Ben D. and Freeman, Frank N. Motion pictures in the classroom: An experiment to measure the value of motion pictures as supplementary aids in regular classroom instruction. Boston: Houghton Mifflin, 1929.

The Eastman Kodak Company funded this massive, twelve city study in the light of their survey showing the poverty of educational motion pictures available and recent technical advances in portable projectors and 16mm safety film stock produced at less cost. Although Wood and Freeman assure readers of their impartiality, it seems clear from the introduction that the object was to justify school funds spent on films and to sanction further expenditure.

Twenty films were compared with conventional instruction; 11,000 children in geography and general science classes grades 4 through 9. Plate VIII shows one of the experimental classrooms. Study guides, booklets and syllabi for twelve weeks were prepared for each course. The 200 teachers knew if they were in the experimental or control group. The control group were allowed any pedagogical device except motion pictures and they used many maps, charts, pictures, diagrams and lantern slides. The experimental group teachers were given guides and scripts to use with the films. Intense rivalry developed between the two groups in several cities.

Data was collected by response to comprehensive test booklets. There were 80,000 to be scored and there is a photograph of them opposite page 50. Reliability of these tests was determined using the Spearman-Brown split-half coefficient.

Many tables serve to depict the findings. A great deal of the book records the outlines of the films, the tests and statements elicited from the film teachers.

In their summary, Wood and Freeman first discuss what they saw as limitations of earlier investigations--mainly there lack of magnitude in scope and present an improvement on these limiting conditions. They also offer a refinement--motion pictures expressly produced for use in the classroom. As findings, they offer the superiority of the film students in providing more concrete answers to descriptive questions while giving equally good answers to abstract questions as the control group. This provides a focus for further development of film instructional technique in emphasizing what is direct and immediate. Although films will never replace teachers, the Eastman teaching film experiment substantiates the appropriateness of using films in education everywhere.